CLAIMS:

1.   A process for producing an alkylaromatic compound comprising the step of contacting an alkylatable aromatic compound with an alkylating agent under alkylation conditions in the presence of an alkylation catalyst comprising phosphorus and a porous crystalline inorganic oxide material having an X-ray diffraction pattern including the d-spacing maxima at 12.4±0.25, 6.9±0.15, 3.57±0.07 and 3.42±0.07 Angstrom.

2.   The process of claim 1, wherein the porous crystalline inorganic oxide material is selected from the group consisting of MCM-22, PSH-3, SSZ-25, MCM-36, MCM-49 and MCM-56.

3.   The process of claim 1, wherein the alkylation catalyst contains between about 0.05 and about 10 wt.% phosphorus, as measured on an elemental basis, based on the weight of the final catalyst.

4.   The process of claim 1, wherein the alkylation catalyst contains between about 0.1 and about 2 wt.% phosphorus, as measured on an elemental basis, based on the weight of the final catalyst.

5.   The process of claim 1, wherein the alkylation catalyst contains between about 0.1 and about 0.5 wt % phosphorus, as measured on an elemental basis, based on the weight of the final catalyst.

6.   The process of claim 1, wherein the alkylation conditions are such as to maintain the alkylatable aromatic compound substantially in the liquid phase.

7.   The process of claim 1, wherein the alkylating agent includes an aliphatic group having 1 to 5 carbon atoms.

8.   The process of claim 1, wherein the aromatic hydrocarbon is benzene and the alkylating agent is selected from ethylene and propylene.

9.   The process of claim 1, wherein the aromatic hydrocarbon is benzene, the alkylating agent is ethylene and the alkylation catalyst includes phosphorus and MCM-22.

5   10.   The process of claim 1, wherein the aromatic hydrocarbon is benzene, the alkylating agent is propylene and the alkylation catalyst includes phosphorus and MCM-49 or MCM-56.